

INCREASING UNDERSTANDING OF ENHANCED INFLUENZA VACCINE PRODUCTS IN LONG-TERM CARE SETTINGS

Benefits of Enhanced Influenza Vaccine Products

Key Points



Influenza viruses produce morbidity and mortality not only through pneumonia and other effects on the lungs but also through cardiovascular complications.

Long-term care facilities can prevent these negative health outcomes through influenza vaccination of both residents and staff.

In addition to pneumonia and potentially fatal lung complications, the influenza virus can increase patients' risk of myocardial infarction (MI) and cerebrovascular accidents (CVAs). Those who survive heart attacks and strokes often find their activities of daily living adversely affected with the individuals residing in long-term care facilities (LTCFs) having an increased acuity level and requiring more assistance.

Influenza-Related Morbidity, Mortality, and Cardiovascular Risks

▶ In the United States over the past decade, an estimated

9 - 45 million

Americans have had influenza infections during a season, resulting in up to



810,000
hospitalizations

+
61,000
deaths

The influenza virus produces cardiovascular complications in the following ways. The influenza virus can directly infect the heart, causing myocarditis or myopericarditis. Through the systemic effects of cytokines and other inflammatory mediators, influenza infection can worsen existing cardiovascular disease; for instance, pre-existing atherosclerotic plaques can be dislodged during systemic inflammation. This creates emboli that can cause an MI if they lodge in coronary arteries or CVAs if they obstruct blood flow to the brain. This increased risk continues for months after influenza infection. Previously healthy individuals can also have cardiovascular events and CVAs as a result of a prothrombotic state induced by systemic inflammation.³⁻⁵

As with COVID-19, influenza more often affects older adults and those with comorbidities; the proportion of influenza-associated fatality is also higher among these patients.^{1,2}

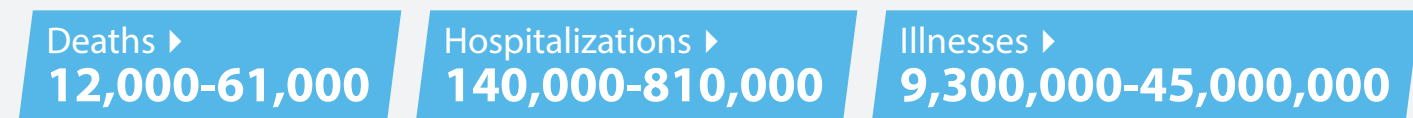
LTCF Residents and Staff Need Protective Immunizations

A growing body of literature shows that influenza vaccines not only reduce the risk of infection but also decrease the severity of an infection if one occurs.^{6,7} For at-risk LTCF residents and the staff who care for them, that is welcome news—and another good reason to be vaccinated annually.

In LTCFs, highly contagious viruses are quickly transmitted among people in confined spaces and sharing common areas. Older adults, especially those with comorbidities, have high mortality rates from severe respiratory illness. Yet only about two-thirds of LTCF residents receive annual flu shots, and among all health care work settings, LTCFs continue to have the lowest staff vaccination rates (67.9% in the 2018–2019 season).⁸

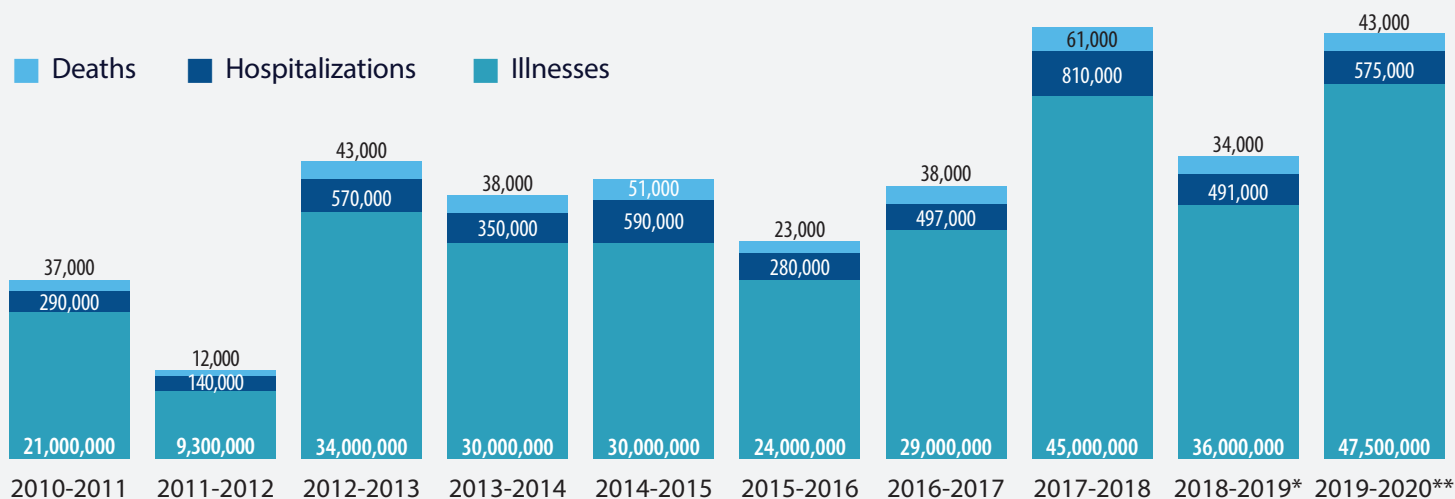
LTCF administrators, medical directors, and directors of nursing must set and enforce nursing home policies that keep residents and staff safe and healthy. Enhanced influenza vaccines have an important role in accomplishing this goal.

▶ **Figure 1. Estimated Range of Annual Burden of Influenza in the United States Since 2010**



*The top range of these burden estimates are from the 2017-2018 flu season. These are preliminary and may change as data are finalized
Source: Reference 1.

▶ **Estimated U.S. Influenza Burden, by Season, 2010–11 Through 2019–20**



*Estimates for these seasons are preliminary and may change as data are finalized.

** 2019–20 data are incomplete. Shown are seasons-to-date figures through April 4, 2020. Only ranges of burden had been released; the midpoint of those ranges is depicted in the figure. The reported ranges for this season at the time this report was prepared were 39 million to 56 million infections, 410,000 to 740,000 hospitalizations, and 24,000 to 62,000 influenza-related deaths.

Resources

- Centers for Disease Control and Prevention. Disease burden of influenza. April 17, 2020. Available at: <https://www.cdc.gov/flu/about/burden/index.html>. Accessed May 18, 2020.
- Centers for Disease Control and Prevention. 2019–2020 U.S. flu season: preliminary burden estimates. Available at: <https://www.cdc.gov/flu/about/burden/preliminary-in-season-estimates.htm>. Accessed May 18, 2020.
- Kwong JC, Schwartz KL, Campitelli MA, et al. Acute myocardial infarction after laboratory-confirmed influenza infection. *N Engl J Med*. 2018;378(4):345–353.
- Boehme AK, Luna J, Kulick ER, et al. Influenza-like illness as a trigger for ischemic stroke. *Ann Clin Transl Neurol*. 2018;5(4):456–463.
- Schaffner W, McElhaney J, Rizzo A, et al. The dangers of influenza and benefits of vaccination in adults with chronic health conditions. *Infect Dis Clin Pract*. 2018;26(6):313–322.
- Thompson MG, Pierse N, Sue Huang Q, et al. Influenza vaccine effectiveness in preventing influenza-associated intensive care admissions and attenuating severe disease among adults in New Zealand 2012–2015. *Vaccine*. 2018;36(39):5916–5925.
- Arriola C, Garg S, Anderson EJ, et al. Influenza vaccination modifies disease severity among community-dwelling adults hospitalized with influenza. *Clin Infect Dis*. 2017;65(8):1289–1297.
- Bardenheier B, Lindley MC, Yue X, et al. Influenza vaccination coverage among health care personnel — United States, 2018–19 influenza season. Centers for Disease Control and Prevention. September 26, 2019. Available at: https://www.cdc.gov/flu/fluview/hcp-coverage_1819estimates.htm. Accessed June 10, 2020.